WHAT IS CLAIMED IS:

1. A method of detecting a posture of an object, by which a relative inclination of said object with respect to a reference is detected, said method comprising the steps of:

acquiring fringe image data carrying phase information of said object;

subjecting the whole or part of said fringe image data to arithmetic processing using Fourier transform so as to determine a tilt frequency of a fringe corresponding to an inclination of said object in said fringe image data; and

detecting said inclination of said object according to said tilt frequency.

2. A method according to claim 1, wherein said phase information is interference fringe information.

3. A method according to claim 1, wherein said object has a rough surface.

4. A method according to claim 1, wherein said object or a reference body providing said reference is a moving member movable by an actuator.

5. A method according to claim 4, wherein said actuator comprises a piezoelectric device.

6. A method according to claim 1, wherein said tilt frequency is determined by defining positional coordinates of a predetermined peak in peaks on a frequency coordinate system obtained by said Fourier transform and carrying out an arithmetic operation for calculating said tilt frequency according to said positional coordinates.

7. An apparatus for detecting a posture of an object, which detects phase information from said object and a relative inclination of said object with respect to a reference, said apparatus comprising:

fringe image data acquiring means for acquiring fringe image data carrying said phase information from said object;

Fourier transform arithmetic means for subjecting the whole or part of said fringe image data to arithmetic processing using Fourier transform;

tilt frequency calculation means for determining a tilt frequency of a fringe corresponding to an inclination of said object in said fringe image data; and

object inclination detection means for detecting an inclination of said object according to said tilt frequency.

8. An apparatus according to claim 7, wherein said phase information is interference fringe information.

9. An apparatus according to claim 7, wherein said apparatus is a Michelson type interferometer.

10. An apparatus according to claim 7, wherein said object or a reference body providing said reference is a moving member movable by an actuator.

11. An apparatus according to claim 10, said actuator comprises a piezoelectric device.

12. A method of detecting a posture of an object, by which a relative inclination of said object with respect to a reference is detected, said method comprising the steps of:

acquiring fringe image data carrying phase information of said object;

subjecting the whole or part of said fringe image data to arithmetic processing using Fourier transform so as to determine phase information including an inclination of said object; and

subjecting thus obtained phase information of said object to a predetermined arithmetic operation so as to detect said inclination of said object.

13. A method according to claim 12, wherein said phase information is interference fringe information.

14. A method according to claim 12, wherein said object has a rough surface.

15. A method according to claim 12, wherein said object or a reference body providing said reference is a moving member movable by an actuator.

16. A method according to claim 15, wherein said actuator comprises a piezoelectric device.

17. A method according to claim 12, wherein said phase information of said object is determined by defining a predetermined spectrum distribution of a fringe corresponding to said inclination of said object in spectrum distributions on a frequency coordinate system obtained by said Fourier transform and carrying out an arithmetic operation for calculating said phase information according to said predetermined spectrum distribution.

18. A method according to claim 12, wherein said predetermined arithmetic operation is an arithmetic operation for determining a least-square plane fitting said phase information of said object.

19. An apparatus for detecting a posture of an object, which detects phase information from said object and a relative inclination of said object with respect to a reference, said apparatus comprising:

fringe image data acquiring means for acquiring fringe image data carrying phase information from said object;

Fourier transform arithmetic means for subjecting the whole or part of said fringe image data to arithmetic processing using Fourier transform;

object phase information calculation means for determining phase information including an inclination of said object according to said fringe image data subjected to said Fourier transform; and

object inclination detection means for detecting said inclination of said object according to said phase information of said object.

20. An apparatus according to claim 19, wherein said phase information is interference fringe information.

21. An apparatus according to claim 19, wherein said apparatus is a Michelson type interferometer.

22. An apparatus according to claim 19, wherein said object or a reference body providing said reference is a moving member movable by an actuator.

23. An apparatus according to claim 22, said actuator

comprises a piezoelectric device.

24. A method of detecting a posture of an object, by which a change in inclination of said object between before and after a movement thereof is detected, said method comprising:

a first step of acquiring first fringe image data carrying phase information of said object before said movement,

subjecting the whole or part of said first fringe image data to arithmetic processing using Fourier transform so as to determine a tilt frequency of a fringe corresponding to an inclination of said object before said movement in said first fringe image data, and

detecting inclination information of said object before said movement according to said tilt frequency;

a second step of acquiring second fringe image data carrying phase information of said object after said movement,

subjecting the whole or part of said second fringe image data to arithmetic processing using Fourier transform so as to determine a tilt frequency of a fringe corresponding to an inclination of said object after said movement in said second fringe image data, and

detecting inclination information of said object after said movement according to said tilt frequency; and

a third step of determining a difference in inclination information of said object between before and after said movement detected by said first and second steps, and detecting a change in inclination of said object between before and after said movement.

25. A method according to claim 24, wherein said phase information is interference fringe information.

26. A method of detecting a posture of an object, by which a change in inclination of said object between before and after a movement is detected, said method comprising:

a first step of acquiring first fringe image data carrying phase information of said object before said movement, and

subjecting the whole or part of said first fringe image data to arithmetic processing using Fourier transform so as to determine a tilt frequency of a fringe corresponding to an inclination of said object before said movement in said first fringe image data;

a second step of acquiring second fringe image data carrying phase information of said object after said movement, and

subjecting the whole or part of said second fringe image data to arithmetic processing using Fourier transform so as to determine a tilt frequency of a fringe corresponding to an inclination of said object after said movement in said second fringe image data; and

a third step of determining a difference between said tilt frequencies of said fringes corresponding to said inclinations of said object before and after said movement detected by said first and second steps, and detecting a change in inclination of said object between before and after said movement according to thus determined difference.

27. A method according to claim 26, wherein said phase information is interference fringe information.